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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/565,642

05/23/2006

Tomohiko Endo

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EXAMINER

BEAULIEU, YONEL

ART UNIT

PAPER NUMBER

3661

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/565,642 | <b>Applicant(s)</b><br>ENDO ET AL. |  |
|                              | <b>Examiner</b><br>/Yonel Beaulieu/  | <b>Art Unit</b><br>3661            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/24/06&amp;6/29/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1 297 999 A2 to Tanaka et al (“Tanaka”).

Regarding claim 1, Tanaka teaches a guiding device for guiding a vehicle (fig. 9) to a target position (23) by controlling (using item 1) a steering angle (sensed by item 4) while estimating a vehicle position at least based on a steering angle value ( $\alpha$ ), characterized in that, in estimating the vehicle position, a slowing operation with respect to a change in a moving distance of the vehicle is applied to a turning curvature that is estimated based on the steering angle value (note ¶¶0022-0026; figs. 3, 6, 10, 14 at least).

Regarding claim 2, Tanaka teaches detection of changes in a characteristic of a tire (col. 1, lines 17 – 27 at least).

Regarding claim 8, Tanaka teaches a vehicle position estimating device, comprising: a detector (3) for detecting a moving distance of a vehicle; a change amount calculator (2) for calculating an amount of a change in a direction of the vehicle

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every small moving distance based on a steering angle value ( $\alpha$ ); and a vehicle position estimator (8) for estimating a position of the vehicle based on the amount of the change in the direction of the vehicle calculated by the change amount calculator (see figs. 4, 5, 10); wherein in calculating the amount of the change in the direction of the vehicle, the change amount calculator applies a slowing operation with respect to a change in a moving distance of the vehicle to a turning curvature that is estimated based on the steering angle value (note abstract; ¶¶0011-0013; 0020-0026 at least).

Regarding claims 5 and 6, Tanaka further teaches absolute steering angle increasing/exceeding a predetermined threshold (col. 6, lines 14 – 27; ¶¶0033, 0040-0042 at least).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka ('999 A2) in view of Shimizu (EP 0 872 402 A2).

As discussed above, Tanaka teaches, all of the limitations except for the detection of a friction coefficient of a road.

However, Shimizu teaches, in the same field of endeavor of guiding device for a vehicle, detection of a friction coefficient of a road (col. 1, lines 23 – 32 at least).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Tanaka's teaching by including detection of a friction coefficient of a road as evidenced by Shimizu in order to enhance automatic steering control for the vehicle.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka ('999) as applied to claims 1-2 above, and further in view of USP 5172317 A to Asanuma et al ("Asanuma").

As discussed above, Tanaka teaches all of the limitations except for the explicit recitations of including tire characteristics and calculation of a total traveling distance.

However, Asanuma teaches, in still another field of guiding device for a vehicle, the inclusion of tire characteristics and calculation of a total traveling distance (col. 4, lines 54 – 59; col. 5, lines 26 – 33; col. 5, lines 45 – 53; col. 6, lines 3 – 11 at least).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Tanaka's teaching by including tire characteristics and

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calculation of total traveling distance as evidenced by Asanuma in order to enhance automatic guidance of the vehicle.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Yonel Beaulieu/ whose telephone number is (571) 272-6955. The examiner can normally be reached on Mon., Wed. & Thur. between 0900 and 1600.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas BLACK can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yonel Beaulieu/  
Yonel Beaulieu  
Primary Examiner  
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